

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

RANGEL-ALDAO *et al.*

Appl. No. (To be assigned; Divisional of
09/665,313)

Filed: (Herewith)

For: **Malt Beverage Having Stabilized
Flavor and Methods of Production
Thereof**

Art Unit: (To be assigned)

Examiner: (To be assigned)

Atty. Docket: 1390.0070006/JAG/BJD

Preliminary Amendment

Commissioner for Patents
Washington, D.C. 20231

Sir:

In advance of prosecution in the above identified matter, Applicants submit the following amendments and remarks. This Preliminary Amendment is provided in the following format:

(A) A clean version of each replacement paragraph/section/claim along with clear instructions for entry;

(B) Starting on a separate page, appropriate remarks and arguments. *See* 37 C.F.R. § 1.121 and MPEP § 714; and

(C) Starting on a separate page, a marked-up version entitled: “Version with markings to show changes made.”

It is not believed that extensions of time or fees for net addition of claims are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account No. 19-0036.

Amendments

Please amend the application as follows:

In the Specification:

In the specification at page 1, please delete the paragraph appearing at lines 3-6 and substitute therefor the following paragraph:

CROSS REFERENCE TO RELATED APPLICATIONS

The present application is a divisional of U.S. Application No. 09/665,313, filed September 19, 2000, which is a divisional of U.S. Application No. 09/150,347, filed September 9, 1998, which claims the benefit of U.S. Provisional Application No. 60/058,398, filed September 9, 1997, the disclosures of all of which are incorporated herein by reference in their entireties.

In the Claims:

Please amend the claims as follows:

(a) Please cancel claims 1-26, 28 and 30, without prejudice to or disclaimer of the subject matter contained therein. Applicants reserve the right to pursue the subject matter of these claims in one or more continuing applications.

(b) Please add the following new claims 31-45:

31. (New) A fermented malt beverage having a stabilized flavor, produced by a method comprising:

- (a) producing a grain malt;
- (b) producing a wort from said grain malt;
- (c) adding a flavor-stabilizing amount of one or more reductase enzymes selected from the group consisting of OYE1 having the amino acid sequence set forth in SEQ ID NO:1, OYE2 having the amino acid sequence set forth in SEQ ID NO:2, and OYE3 having the amino acid sequence set forth in SEQ ID NO:3; and
- (d) fermenting said wort to produce a fermented malt beverage having stabilized flavor.

32. (New) A fermented malt beverage having a stabilized flavor, produced by a method comprising:

- (a) producing a grain malt;
- (b) producing a wort from said grain malt;
- (c) contacting said wort with a genetically modified yeast cell producing enhanced amounts of at least one reductase enzyme native to yeast cells as compared to cells of the wild-type strain of said yeast cell, which wild-type cells produce measurable amounts of said reductase enzyme, wherein said reductase enzyme is selected from the group consisting of OYE1 having the amino acid sequence set forth in SEQ ID NO:1, OYE2 having the amino acid sequence set forth in SEQ ID NO:2, and OYE3 having the amino acid sequence set forth in SEQ ID NO:3; and

(d) allowing said yeast cell to ferment said wort, thereby producing a fermented malt beverage having stabilized flavor.

33. (New) The fermented malt beverage of claim 31 or claim 32, wherein said reductase enzyme is OYE 1 having the amino acid sequence set forth in SEQ ID NO:1.

34. (New) The fermented malt beverage of claim 31 or claim 32, wherein said reductase enzyme is OYE 2 having the amino acid sequence set forth in SEQ ID NO:2.

35. (New) The fermented malt beverage of claim 31 or claim 32, wherein said reductase enzyme is OYE3 having the amino acid sequence set forth in SEQ ID NO:3.

36. (New) The fermented malt beverage of any one of claims 27, 29 and 31, wherein said reductase enzyme is a recombinant reductase enzyme.

37. (New) The fermented malt beverage of claim 36, wherein said recombinant reductase enzyme is produced in a yeast host cell.

38. (New) The fermented malt beverage of claim 37, wherein said yeast host cell is a *Saccharomyces* cell.

39. (New) The fermented malt beverage of claim 36, wherein said recombinant reductase enzyme is produced in a bacterial host cell.

40. (New) The fermented malt beverage of claim 39, wherein said bacterial host cell is selected from the group consisting of an *Escherichia* host cell, a *Bacillus* host cell and a *Xanthomonas* host cell.

41. (New) The fermented malt beverage of claim 36, wherein said recombinant reductase enzyme is produced in an animal host cell.

42. (New) The fermented malt beverage of claim 41, wherein said animal host cell is an insect cell.

43. (New) The fermented malt beverage of claim 32, wherein said yeast cell is a *Saccharomyces* cell.

44. (New) The fermented malt beverage of claim 38 or claim 43, wherein said yeast cell is a *Saccharomyces cerevisiae* or a *Saccharomyces carlsbergensis* cell.

45. (New) The fermented malt beverage of any one of claims 27, 29, 31 and 32, wherein said fermented malt beverage is a beer.

(c) Please amend claims 27 and 29 as follows:

Please substitute the following claim 27 for currently pending claim 27:

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27. (Once amended) A fermented malt beverage in which the flavor of said beverage has been stabilized by a method comprising contacting said beverage with a flavor-stabilizing amount of one or more reductase enzymes selected from the group consisting of OYE1 having the amino acid sequence set forth in SEQ ID NO:1, OYE2 having the amino acid sequence set forth in SEQ ID NO:2, and OYE3 having the amino acid sequence set forth in SEQ ID NO:3.

Please substitute the following claim 29 for currently pending claim 29:

29. (Once amended) A fermented malt beverage having a stabilized flavor, produced by a method comprising:

- (a) producing a grain malt;
- (b) producing a wort from said grain malt;
- (c) adding a flavor-stabilizing amount of one or more reductase enzymes having an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2 and SEQ ID NO:3;
- (d) fermenting said wort to produce a fermented malt beverage;
- (e) processing said fermented malt beverage to produce a processed fermented malt beverage; and
- (f) packaging said processed fermented malt beverage.

Remarks

The foregoing amendments to the specification have been made solely to update the priority information upon filing of the present divisional application. In addition, by the foregoing amendments claims 1-26, 28 and 30 have been canceled without prejudice or disclaimer, new claims 31-45 are sought to be entered, and claims 27 and 29 have been amended. These amendments to the claims are fully supported in the specification as originally filed. In particular, support for new claims 31-45 may be found in the specification at pages 13-15, at pages 19-22, throughout the Examples at pages 26-35, and in the claims as originally filed; and support for the amendments to claims 27 and 29 may be found in claims 1 and 27, and in claims 2 and 29, respectively, as originally filed. Hence, no new matter has been added by way of these amendments. Upon entry of the foregoing amendments, claims 27, 29 and 31-45 are pending in the application, with claims 27, 29, 31 and 32 being the independent claims.

It is believed that the present application is in condition for immediate examination. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



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In the Specification:

In the specification at page 1, the paragraph appearing at lines 3-6 is amended as follows:

CROSS REFERENCE TO RELATED [APPLICATION] APPLICATIONS

The present application is a divisional of U.S. Application No. 09/665,313, filed September 19, 2000, which is a divisional of U.S. Application No. 09/150,347, filed September 9, 1998, which claims the benefit of U.S. Provisional Application No. 60/058,398, filed September 9, 1997, the [disclosure of which is] disclosures of all of which are incorporated herein by reference in [its entirety] their entireties.

In the Claims:

- (a) Claims 1-26, 28 and 30 have been cancelled, without prejudice or disclaimer.
- (b) New claims 31-45 are sought to be entered.
- (c) Claims 27 and 29 are sought to be amended as follows:

27. (Once amended) A fermented malt beverage in which the flavor of said beverage has been stabilized [according to the method of claim 1.] by a method comprising contacting said beverage with a flavor-stabilizing amount of one or more reductase enzymes selected from the

group consisting of OYE1 having the amino acid sequence set forth in SEQ ID NO:1, OYE2 having the amino acid sequence set forth in SEQ ID NO:2, and OYE3 having the amino acid sequence set forth in SEQ ID NO:3.

29. (Once amended) A fermented malt beverage having a stabilized flavor, produced [according to the method of claim 2.] by a method comprising:

- (a) producing a grain malt;
- (b) producing a wort from said grain malt;
- (c) adding a flavor-stabilizing amount of one or more reductase enzymes selected from the group consisting of OYE1 having the amino acid sequence set forth in SEQ ID NO:1, OYE2 having the amino acid sequence set forth in SEQ ID NO:2, and OYE3 having the amino acid sequence set forth in SEQ ID NO:3;
- (d) fermenting said wort to produce a fermented malt beverage;
- (e) processing said fermented malt beverage to produce a processed fermented malt beverage; and
- (f) packaging said processed fermented malt beverage.

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